



Digitized by the Internet Archive
in 2013

<http://archive.org/details/harvardmedicalal46harv>

THE FRANCIS A. COUNTWAY
LIBRARY OF MEDICINE
BOSTON

29 NOV 1971

HARVARD MEDICAL ALUMNI bulletin

September / October 1971





The negative power of anxiety.

This man thinks his next
quarrel may be his last.

THE FRANCIS A. COUNTWAY
LIBRARY OF MEDICINE
BOSTON
29 NOV 1971

For the hypertensive patient, severe symptoms may be intensified, aggravated by emotional reaction to stress. Acutely aware of the adverse impact his emotions may have on the course of his life, the hypertensive patient's anxieties may be increased.

Adjunctive use of Libritabs may be of significant value in reducing excessive anxiety, which can induce adverse biochemical and physiological changes related to the vascular system and, by so doing, jeopardize management of the disease itself.

Libritabs (chlordiazepoxide) is used concomitantly with certain specific medications of other classes of drugs, such as cardiac glycosides, diuretics and antihypertensive agents, whenever anxiety is a significant component of the clinical profile.

Libritabs is especially well suited for extended use because of its wide margin of safety. In general use, the most common side effects reported have been drowsiness, ataxia and confusion, particularly in the elderly and debilitated. (See full prescribing information.) Moreover, the antianxiety benefits of Libritabs are generally maintained without diminution of effect or need for increase in dosage. When treatment is prolonged, periodic blood counts and liver function tests are advisable.

Libritabs (chlordiazepoxide) permits flexible, individualized therapy through its three oral dosage strengths.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmaco-

logic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances, syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

To relieve
excessive anxiety
in hypertensive patients
adjunctive

Libritabs®
(chlordiazepoxide)

5-mg, 10-mg, 25-mg tablets

t.i.d./q.i.d.
up to 100 mg daily
for severe anxiety

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110

EIGHTH ANNUAL TOUR PROGRAM—1972

This unique program of tours is offered to alumni of Harvard, Yale, Princeton, M.I.T., Cornell, Dartmouth, Univ. of Pennsylvania and certain other distinguished universities and to members of their families. The tours are based on special reduced air fares which offer savings of hundreds of dollars on air travel. These special fares, which apply to regular jet flights of the major scheduled airlines but which are usually available only to groups and in conjunction with a qualified tour, are as much as \$500 less than the regular air fare. Special rates have also been obtained from hotels and sightseeing companies.

The tour program covers areas where those who might otherwise prefer to travel independently will find it advantageous to travel with a group. The itineraries have been carefully constructed to combine the freedom of individual travel with the convenience and savings of group travel. There is an avoidance of regimentation and an emphasis on leisure time, while a comprehensive program of sightseeing ensures a visit to all major points of interest. Hotel reservations are made as much as a year and a half in advance to ensure the finest in accommodations.

EAST AFRICA

22 DAYS \$1699

A luxury "safari" to the great national parks and game reserves of Uganda, Kenya and Tanzania. The carefully planned itinerary offers an exciting combination of East Africa's spectacular wildlife and breathtaking natural scenery: great herds of elephant and launch trips through hippo and crocodile in QUEEN ELIZABETH NATIONAL PARK and MURCHISON FALLS NATIONAL PARK; multitudes of lion and other plains game in the famed SERENGETI PLAINS and the MASAI-MARA RESERVE; the spectacular concentration of wildlife in the NGORONGORO CRATER; tree-climbing lions around the shores of LAKE MANYARA; the AMBOSELI RESERVE, where big game can be photographed against the towering backdrop of snow-clad Mt. Kilimanjaro; and the majestic wilds of TSAVO PARK, famed for its elephant and lion as well as its unusual Mzima Springs. Also included are a cruise on LAKE VICTORIA in Uganda and visits to the fascinating capital cities of KAMPALA and NAIROBI. The altitude in East Africa provides an unusually stimulating climate, with bright days and crisp evenings (frequently around a crackling log fire), and the tour follows a realistic pace which ensures a full appreciation of the attractions visited. Total cost is \$1699 from New York. An alternate itinerary, with a shorter stay in Uganda, visits the famed VICTORIA FALLS, on the mighty Zambezi River between Zambia and Rhodesia, with a total rate of \$1759 from New York. Departures in January, February, March, May, June, July, August, September, October, November and December 1972 (\$25 additional for departures in June, July, August).



THE ORIENT

30 DAYS \$1759

1972 marks the eighth consecutive year of operation for this outstanding tour, which offers the greatest attractions of the Orient at a sensible and realistic pace. Twelve days are devoted to the beauty of JAPAN, visiting the ancient "classical" city of KYOTO, the modern capital of TOKYO, and the lovely FUJI-HAKONE NATIONAL PARK, with excursions to ancient NARA, the magnificent medieval shrine at NIKKO, and the giant Daibutsu at KAMAKURA. Visits are also made to BANGKOK, with its glittering temples and palaces; the fabled island of BALI, considered one of the most beautiful spots on earth; the ancient temples near JOGJAKARTA in central Java; the mountain-circled port of HONG KONG, with its free port shopping; and the cosmopolitan metropolis of SINGAPORE, known as the "cross-roads of the East." Tour dates include outstanding seasonal attractions in Japan, such as the spring cherry blossoms, the beautiful autumn leaves, and some of the greatest annual festivals in the Far East. Total cost is \$1759 from California, \$1965 from Chicago, and \$2034 from New York, with special rates from other cities. Departures in March, April, June, July, September and October 1972.

AEGEAN ADVENTURE

22 DAYS \$1329

This original itinerary explores in depth the magnificent scenic, cultural and historic attractions of Greece, the Aegean, and Asia Minor—not only the major cities but also the less accessible sites of ancient cities which have figured so prominently in the history of western civilization, complemented by a luxurious cruise to the beautiful islands of the Aegean Sea. Rarely has such an exciting collection of names and places been assembled in a single itinerary—the classical city of ATHENS; the Byzantine and Ottoman splendor of ISTANBUL; the site of the oracle at DELPHI; the sanctuary and stadium at OLYMPIA, where the Olympic Games were first begun; the palace of Agamemnon at MYCENAE; the ruins of ancient TROY; the citadel of PERGA-

MUM; the marble city of EPHEBUS; the ruins of SARDIS in Lydia, where the royal mint of the wealthy Croesus has recently been unearthed; as well as CORINTH, EPIDAUROS, IZMIR (Smyrna) the BOSPORUS and DARDENELLES. The cruise through the beautiful waters of the Aegean will visit such famous islands as CRETE with the Palace of Knossos; RHODES, noted for its great Crusader castles; the windmills of picturesque MYKONOS; the sacred island of DELOS; and the charming islands of PATMOS and HYDRA. Total cost is \$1329 from New York. Departures in April, May, July, August, September and October, 1972.

MOGHUL ADVENTURE

29 DAYS \$1725

An unusual opportunity to view the outstanding attractions of India and the splendors of ancient Persia, together with the once-forbidden mountain kingdom of Nepal. Here is truly an exciting adventure: India's ancient mounuments in DELHI; the fabled beauty of KASHMIR amid the snow-clad Himalayas; the holy city of BANARAS on the sacred River Ganges; the exotic temples of KHAJURAHO; renowned AGRA, with the Taj Mahal and other celebrated monuments of the Moghul period such as the Agra Fort and the fabulous deserted city of Fatehpur Sikri; the walled "pink city" of JAIPUR, with an elephant ride at the Amber Fort; the unique and beautiful "lake city" of UDAIPUR; a thrilling flight into the Himalayas to KATHMANDU, capital of NEPAL, where ancient palaces and temples abound in a land still relatively untouched by modern civilization. In PERSIA (Iran), the visit will include the great 5th century B.C. capital of Darius and Xerxes at PERSEPOLIS; the fabled Persian Renaissance city of ISFAHAN, with its palaces, gardens, bazaar and famous tiled mosques; and the modern capital of TEHERAN. Outstanding accommodations include hotels that once were palaces of Maharajas. Total cost is \$1725 from New York. Departures in January, February, August, October and November 1972.

Rates include Jet Air, Deluxe Hotels, Most Meals, Sightseeing, Transfers, Tips and Taxes. Individual brochures on each tour are available.

For Full ALUMNI FLIGHTS ABROAD
Details White Plains Plaza
One North Broadway
Contact: White Plains, N.Y. 10601

25 SHATTUCK STREET
BOSTON, MASS. 02115

JOSEPH GARLAND '19
Special Guest Editor

GEORGE S. RICHARDSON '46
Editor

JOAN F. RAFTER
Managing Editor

LYN LEVY
Assistant Editor

MILTON C. PAIGE, JR.
Advertising Consultant

MEDIA REP CENTER, INC.
1127 STATLER OFFICE BUILDING
BOSTON, MASS. 02116
(617) 542-7720

Advertising Representative

EDITORIAL BOARD

HERRMAN L. BLUMGART '21

CHARLES H. BRADFORD '31

ERNEST CRAIGE '43B

PAUL J. DAVIS '63

ROBERT M. GOLDWYN '56

FRANZ J. INGELFINGER '36

HOWARD S. KIRSHNER '72

JEAN MAYER, PH.D.

LEE M. NADLER '73

JOHN C. NEMIAH '43B

J. GORDON SCANNELL '40

PETER W. WILLIAMS '74



ASSOCIATION OFFICERS

MAXWELL FINLAND '26, *President*

JOHN H. TALBOTT '28,
President-Elect

F. SARGENT CHEEVER '36,
Past-President

JAMES H. JACKSON '43A,
Vice President

WILLIAM W. BABSON '30, *Secretary*

CARL W. WALTER '32, *Treasurer*

COUNCILORS

W. GERALD AUSTEN '55

ROMAN W. DESANTIS '55

SAMUEL L. KATZ '52

JOHN V. KIRKLAND '42

JOHN W. LITTLEFIELD '47

CHESTER M. PIERCE '52

CURTIS PROUT '41

JOHN A. SCHILLING '41

JOHN W. SINGLETON '57

*Representative to
Associate Harvard Alumni*

WILLIAM R. PITTS '33

*Representative to
Associate Harvard Alumni*

CONTENTS

COVER: Pictured on the cover is Mt. Cannon in Glacier National Park. The mountain honors Walter Bradford Cannon, Harvard's noted physiologist. For a special article on Dr. Cannon, see page 4. Picture courtesy of National Park Service.

WALTER BRADFORD CANNON. 4
by Joseph Garland

RECOLLECTIONS OF OTTO FOLIN. 8
by William H. Forbes

RELIEF FOR MANPURA. 12
*by Lincoln C. Chen
and Jon E. Rohde*

COMMUNITY MENTAL HEALTH. 16
by Donald J. Scherl

EDITORIALS. 20

ALONG THE PERIMETER. 22

ALUMNI NOTES. 24

WILSON G. SMILLIE. 30

DEATH NOTICES. 31

*The opinions of contributors to the Bulletin do not
necessarily reflect those of the Editorial Staff.*

© HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION 1971

PERRY J. CULVER '41
Director of Alumni Relations

WALTER BRADFORD CANNON

GEORGE HIGGINSON PROFESSOR of Physiology

by JOSEPH GARLAND '19

WALTER BRADFORD CANNON, the hundredth anniversary of whose birth fell on October 19, was born almost synchronously with the establishment of the department of physiology at Harvard Medical School, that he was later to lead so brilliantly. The department celebrated its centennial in June, and now it is the *Bulletin's* privilege to honor the memory of Dr. Cannon under similar circumstances.

The early attention paid at Harvard to physiology had been hardly more than rudimentary. Oliver Wendell Holmes was Parkman Professor of Anatomy and Physiology from 1847 until 1871, as well as professor of histology and physical chemistry. Little attempt was made to initiate any truly original scientific investigation.

In the mid 1860's, Josiah S. Lombard was appointed lecturer and later assistant professor of physiology, and in 1864 Edouard Brown Sequard who had been engaged in physiological research in Paris, became professor of physiology and pathology of the nervous system, in addition to practicing medicine in Cambridge. William T. Lusk, father of the eminent physiologist, Graham Lusk, lectured in physiology in 1870-1871, and thus the more or less unorganized predepartmental instruction in physiology ended.

An account of the founding of the department by Henry Pickering Bowditch was published in the August *Bulletin* and needs no more than a brief note at this time to bring the two events together. Dr. Bowditch had been graduated from Harvard College in 1861 and had enrolled in the Lawrence Scientific School. The Civil War interrupted his academic career while he served

as a cavalry officer in the Union Army from November of that year until June, 1865. At war's end, he resumed his studies and received a master's degree in 1866 and his M.D. in 1868. He went then to Paris and later to Leipzig where he worked under the distinguished physiologist, Karl Ludwig.

In December, 1869, he was asked by President Eliot to return to Harvard and lecture in physiology. He declined this invitation but accepted in the spring of 1871 and came home that fall to serve as assistant professor of physiology and organize the department. (When asked to whom he was assistant he replied, according to Dr. Cannon, "myself.") Dr. Bowditch, who rose rapidly from his assistant professorship to become the first George Higginson Professor of Physiology, was also the first Medical School faculty member to restrict himself to research and teaching. His first paper, published in 1871, was of special importance, for it described the *treppé* phenomenon and the all-or-none law in the contraction of cardiac muscle, the result of investigations carried on in Germany.

Much of the teaching in the department was taken over by W.T. Porter, scientifically oriented, in the late 1890's; he initiated the policy of encouraging students to familiarize themselves with primary sources.

Walter Bradford Cannon, of Scottish-Irish descent, was born in Prairie du Chien, Wisconsin. He attended public schools in Milwaukee and St. Paul, and then, despite his limited financial resources, was persuaded by an alumnus to enroll at Harvard. This he was able to achieve by means of a freshman scholarship, followed by others, whatever aid his

father was able to give, and extra-curricular employment. In his four college years he mastered 22 courses, two of which were of research grade, and graduated in 1896, *summa cum laude*. During his undergraduate years he was strongly influenced by William James and considered making a career of philosophy, but was counseled by James himself not to do it — "You will be filling your belly with east wind," was James's cryptic warning. Whether this advice applied to the study, the teaching, or the practice of the subject was not stated, but we know that he returned to his original plan of entering the Medical School, and was guided by a kindly philosophy of service throughout his life.

At the end of his first year in the School he received the A.M. degree. During the year he had conducted original experiments observing the process of deglutition and peristalsis as revealed by x-ray, using an opaque substance, starting with pearl buttons passing down the esophagus of a goose. He later shifted to bismuth salts. These studies were published in Volume I of the *American Journal of Physiology* and later as a monograph.

While still an undergraduate in college, rooming with Harry Bigelow, a law student who later became Dean of the University of Chicago Law School, he was impressed with the case method of teaching law, and in an article in the *Boston Medical and Surgical Journal* in 1900, suggested its application to the teaching of medicine. This became the basis for the Cabot Clinic at the Massachusetts General Hospital.

At the beginning of his fourth year in medical school, Cannon was asked to give the course on compara-

tive anatomy of vertebrates at Harvard and Radcliffe; after his graduation in 1900 he became instructor in physiology, then served as assistant professor from 1902 to 1906. In the latter year he was appointed the second George Higginson Professor of Physiology, and succeeded Bowditch as head of the department. Mrs. Cannon, according to her son, Bradford, often alluded to a comment by Mrs. Irving Babbitt who, when Dr. Cannon was made a full professor remarked: "I hope he will now discontinue those disgusting researches on the stomach and intestines."

A year after his graduation Dr. Cannon married Cornelia James whom he had known in St. Paul and later when she was an undergraduate at Radcliffe. "Throughout our married life," he wrote in his autobiographical memoir, *The Way of an Investigator*, "my wife has been my best, my most helpful and most devoted counselor and companion." "She was a very dynamic person," her son has written about her, "full of original ideas, determination, and a willingness to stand up for causes she thought right. Her constant letters to the editor of the *Herald* and *Globe* were a delight to her friends and to her family. In addition she was active in Cambridge affairs and during the grammar and high school days of my sisters and myself, she attended the meetings of the Cambridge School Committee regularly, writing reports of their deliberations and shortcomings to the *Cambridge Chronicle*. Hurley, one of the School Committee members, who later became Governor of Massachusetts, used to speak of her as 'that woman.'"

She was the author of two novels: *Red Rust*, based on the search in Minnesota for a rust-resistant strain of wheat; and *Heirs*, dealing with a dying New England family and the influx of European immigrants into a small New Hampshire town. In addition, fascinated by the Indians of the Southwest, she wrote four children's books on the Pueblo tribes. She outlived Walter by a quarter century, dying in December, 1969,

at the age of 93.

Jean Mayer, in "Walter Bradford Cannon — A Biographical Sketch," tells of a visit made by the Cannons to his parents in Paris, when he was a small boy. He was much more impressed by meeting the author of "Lazaro in the Pueblos" than by making the acquaintance of her husband, who had merely produced "Bodily Changes in Pain, Hunger, Fear, and Rage."

Dr. Cannon was an only son. Of his three sisters, Ida, Bernice, and Jane, Ida was best known in the medical world. Born in Milwaukee, she trained in nursing at the City and County Hospital in St. Paul, and at the Simmons College School of Social Work in Boston. She was for 37 years chief of the Social Service Department of the Massachusetts General Hospital, the first in America, initiated by Dr. Richard C. Cabot. It was here that I came to know, respect, and admire her. From 1920 to 1922 she was president of the American Association of Medical

Social Workers. She was the recipient of honorary degrees from Boston University and the University of New Hampshire, and the Lemuel Shattuck Award of the Massachusetts Public Health Association. She died in July, 1960, at 83.

Of Dr. Cannon's five children, Bradford, the only son, is a distinguished plastic surgeon at the Massachusetts General Hospital; Wilma is a noted sinologist; Linda, director of a social agency in Washington, D.C.; Marian, a painter; and Helen, active in social reform in Cleveland. As the twigs are bent, so are the trees inclined.

Claiming, in his short history of the physiology department, previously mentioned, the right to reminisce, although still only in his mid-fifties, Cannon tells of his wandering, 30 years before, into the apparatus room of the physiological laboratory in the old building of the school on Boylston Street and being met by Frank Foley, the laboratory boy, "who informed me that students

Dr. and Mrs. Cannon at their New Hampshire home.



were not allowed in the laboratory and that I had better get out. He was mistaken in his view, but he had a way with him, and I consequently did get out."

Further on in his reminiscences, he described and demonstrated some of Bowditch's inventions such as the "Bowditch clock" to stimulate or register time intervals. Another device recorded graphically the amount of water displaced from a plethysmograph by having it run into a test tube supported by a wire spring. He listed some of the various investigators who had worked in Bowditch's laboratory, including Harold C. Ernst, who had there made the early studies of bacterial culturing that resulted in his organization of the department of bacteriology.

Dr. Cannon mentions in his autobiography that he thought of himself as part of a family of physiologists — "one of Bowditch's sons, and a grandson of Ludwig on one side, and Jeffries Wyman on the other, with perhaps a great uncle in Claude Bernard."

The x-ray studies on the gastrointestinal tract continued for several years and led to investigations on the effect of emotion on peristalsis. This in turn initiated broader studies of the emotions and eventually an analysis of the various functions of the sympathetic nervous system. The whole subject, which paved the way

Dr. Cannon in 1945.



for a concept of psychomatic medicine, was presented in the classic volume: *Bodily Changes in Pain, Hunger, Fear, and Rage*, published by Appleton in 1915.

As early as 1906, Cannon had started advocating a full four month course in biochemistry, with Otto Folin in mind to conduct it. Despite the fact that President Eliot was certain the School could not compete with the Rockefeller Institute's offer of \$4,500 salary, Folin was willing to accept what was offered, but wanted a full professorship; he then settled for an associate professorship in biological chemistry, and so the department of biochemistry was founded.

When efforts were later made to induce Cannon and Folin to shift their allegiance to the Mayo Clinic, the greater freedom to pursue basic research at Harvard outweighed the considerable increase in salaries that had been offered. In reply to Rowntree, Cannon wrote: "where could I as a physiologist be of greatest service to medicine?"

On another occasion, during a discussion on salaries with a group of colleagues, he explained his indifference to the root of all evil: "I *have* all the money I want. My wife gives me ten dollars a month and with that I pay my carfare, buy my lunches, and get my hair cut." Diogenes was no more independent of fiscal responsibilities than this and less practical.

In 1930 when the Rockefeller Foundation made a gift of \$175,000 to Harvard "for research in physiology under Dr. Cannon, and for physical chemistry" it was the first time the Foundation had supported a person rather than a project.

The orderly progress of Dr. Cannon's physiological investigations was interrupted by World War I. Although 46 years old, he enlisted in April, 1917 as a first lieutenant in the Harvard Hospital Unit with the special assignment of studying wound shock. Detailed wherever his services could be most effective, he served first with the British in a casualty clearing station at Bethune

in France, later in London, then back to France at Ecury, Dijon and other places. In all he made significant contributions to the care of the seriously wounded. He was discharged at the end of the war as a lieutenant colonel. A number of papers on wound shock were published during and soon after the war, and a monograph *Traumatic Shock* appeared in 1923, the result of a series of studies conducted during the three years following the conflict. He became chairman of the National Research Council's Subcommittee on the Physiology of Shock in 1917, delivered the Croonian Lecture in 1918, was created Commander of the Order of the Bath in 1919, and awarded the Distinguished Service Medal in 1922.

During the 1920's he conducted studies on the mechanisms for balancing the slightly unstable state (or flexible instability) of the biological organism and named it "homeostasis." This work was summarized as "Organization for Physiological Homeostasis" in *Physiological Reviews* in 1929.

In the course of studying the secretion of adrenalin by means of its action on the denervated heart, he and his coworkers discovered and named sympathin E, the excitor factor, and sympathin I, the inhibitor. The term sympathin has been replaced by norepinephrin. *Autonomic Neuro-Effector Systems*, with Arturo Rosenblueth,* a young Mexican colleague, as collaborator, was published in 1937 as a result of these investigations. Years later the Nobel Prize in physiology and medicine was awarded to others for an elaboration of this work.

Among his investigations cited in *The Way of an Investigator* as evi-

* Arturo Rosenblueth, born in Mexico in 1900, came to Harvard in 1930 to study physiology in Cannon's Department. In 1944 he became head of the department of physiology at National Institute of Cardiology in Mexico City, where he died on September 20, 1970. His obituary appears in the March-April *Bulletin*.

dence that creative activity is not restricted to impetuous youth are those on wound shock, conducted when he was between 46 and 51 years of age; homeostasis when he was between 51 and 59; chemical mediation of nerve impulses at age 59 to 68; and the phenomenon of a pace-maker in the rhythmic pulsations of the cerebral cortex, when he was over 70.

"There may be a large discrepancy between physiological old age and chronological old age. Some men are old at fifty-five and others are young at seventy-five," he concluded.

In addition to Dr. Cannon's major publications already referred to, should be mentioned *Wisdom of the Body*, 1932, (Norton); *Digestion and Health*, 1936, (Norton); and *Twenty-Five Years as a Professor of Physiology*, 1937, (Harvard University Press).

The Way of an Investigator, published in 1945, represents his factual autobiography and much more; it not only discloses, unassumingly, his background, his history and his accomplishments; it is a series of philosophical essays on why and how scientific research must be undertaken. In the second chapter, "The Spirit of Adventure," he writes, "The thrill of being first to find a spot which has not before been researched and to view it with a 'wild surmise' is quite exceptional." This thrill may be inspired by intellectually scientific or physical geographical exploration or a combination of both, as Keats expressed it in the sonnet "On First Looking Into Chapman's Homer," from which Dr. Cannon took his brief quotation regarding the wild surmise.

Then felt I like some watcher
of the skies
When a new planet swims into
his ken;
Or like stout Cortez, when with
eagle eyes
He stared at the Pacific — and
all his men
Look'd at each other with a
wild surmise —
Silent — upon a peak in Dar-
ien.



Ida M. Cannon and Dr. Richard Cabot.

SUCH bold and imaginative exploration is suggested to him by the climbing with his bride, on their honeymoon, of Goat Mountain in what is now Glacier National Park. Goat Mountain, never before conquered, to anyone's knowledge, was later officially named Cannon Mountain, and so it remains. This adventure followed a three-week birch-bark canoe trip down the St. Croix and Mississippi Rivers, indicating where the spirit of adventure can lead a couple of their caliber!

A little later he quotes William Beaumont: "Truth, like beauty, when 'unadorned is adorned the most,' and in prosecuting these experiments and inquiries I believe I have been guided by its light."

Dr. Cannon philosophizes on the value of "hunches" in the subconscious elucidation of knotty problems; on serendipity, or the sudden coming upon unexpected and unsought rewards; on the uses of controversy, when it is without acrimony, in the advancement of knowledge. "A final feature of science," he believes, "... is what may properly be called its spiritual value" — a slow and gradual insight into the facts on which life is based.

Many interests with their obligations and opportunities for diversified service came to Walter Can-

non as he pursued his life's objectives. In 1908 he became chairman of the Section on Physiology and Pathology of the American Medical Association and in his chairman's address strongly expressed his views on the humane use of animals in scientific experimentation, and the emotional reaction of the so-called antivivisectionists in trying to defeat such use. As a result he was made chairman of a Committee for the Protection of Medical Research, which he served actively for 17 years.

He became national chairman of the Medical Bureau to Aid Spanish Democracy in the early 1930's. It was a cause in which he was especially interested because he was inherently devoted to the principle of personal freedom, and Juan Negrin, professor of physiology at Madrid and an intense patriot, whom he greatly admired, became premier in the Republican government until it was overthrown by Franco. In 1940 he was made chairman of the Committee on Shock and Transfusion of the National Research Council. An internationalist and a firm believer in the brotherhood of man, he was foreign secretary of the National Academy of Sciences, and served as president of the American-Soviet Medical Society. His friends

and scientific colleagues were to be found on every continent with the possible exception, at that time, of the Antarctic.

"Cannon's outlook," according to Robert S. Morison, director of the division of biological sciences at Cornell University, writing in the *International Encyclopedia of the Social Sciences* (Vol. 2, 1968) "was basically that of the enlightened nineteenth century liberal, and his attitude toward life as a whole was similar to his approach to laboratory investigation — simple, direct, devoted and optimistic." Mayer attributed his outstanding success as a teacher "to his gift for attracting young men to his laboratory to make them feel the joy of research, the excitement of discussion between dedicated investigators."

"And there were personal traits which greatly enhance his influence," as Philip Bard, his former student, now professor of physiology emeritus at Johns Hopkins, emphasizes in his introduction to the special edition of *The Way of an Investigator* reprinted for the 1968 International Congress of Physiological Sciences. "His whimsical humor, his modesty, fairness, and helpfulness drew the abiding affection and loyalty of his students and fellow workers, his great energy and zeal for the establishment of truth their wondering respect."

Although far from being a physiologist, or especially addicted to that discipline, I respected and admired Dr. Cannon when I was one of his students in 1916. I have always remembered how enthusiastically he emphasized the importance of some subject that he was presenting to his class by latinizing two homely but convincing words — *stuffedus realus!*

Dr. Cannon retired to become professor emeritus in 1942, having, with his 36 years as head of the department, more than matched Bowditch's 35 years; he was succeeded by Eugene M. Landis, who retired in 1967 to be followed by Dr. John R. Pappenheimer. Thus three George Higginson professors held

the post for an almost unbelievable 96 years! For the last 15 years of his life, Dr. Cannon suffered greatly from mycosis fungoides, probably induced by his early unprotected exposures to radiation and of this he died on October 1, 1945.

It may be appropriate to close this brief sketch with the same verse by Dr. S. Weir Mitchell — medical investigator, eminent neurologist, novelist, and poet — with which Walter Cannon ended his autobiography:

I know the night is near at hand.
The mists lie low on hill and bay,
The autumn sheaves are dewless, dry;
But I have had the day.

BIBLIOGRAPHY

- Aub, J.C. and Hapgood, R.K.: *Pioneer in Modern Medicine: David Edsall of Harvard*, Harvard Medical Alumni Association, 1970.
- Barger, A.C.: "To Build Castles In the Air," *Harvard Medical Alumni Bulletin*, Vol. 45, July-August, 1971, p. 16.
- Cannon, B.: Personal Communication.
- Cannon, W.B.: "The History of the Physiology Department of the Harvard Medical School," *Harvard Medical Alumni Bulletin*, March, 1927.
- Cannon, W.B.: *The Way of an Investigator. A Scientist's Experiences in Medical Research*. Hafner Publishing Company, New York and London, 1968.
- Mayer, J.: "Walter Bradford Cannon — A Biographical Sketch." *J. Nutrition*, 87: 1-8, 1965.

RECOLLECTIONS of OTTO FOLIN

by WILLIAM H. FORBES, D. Phil., M.D.

I N the first third of this century each medical school class spent its spring term in biochemistry under Otto Folin and in physiology under Walter Cannon. This is the centennial of Professor Cannon's birth, and his life is described elsewhere in this issue of the *Bulletin*. I have been asked to write a few words about his distinguished contemporary, Professor Folin, who is, I am sure, quite vividly remembered by his students. He was, however, rather reticent by nature about his personal life and only those who were fortunate enough to do some graduate work or special studies under him saw much of his sense of humor or heard anything about his unusual boyhood. I was among the fortunate.

He was a memorable man, rather thin, moderately tall and very distinctive in appearance. His face, which had never been handsome, had been markedly distorted by the accidental cutting (during an operation on his neck) of the motor nerves

supplying his left cheek. This had affected to some extent his left eyelid and the left half of his mouth and tended to make his pronunciation of "B" sound like a "P." In addition, he still had, even after many years in this country (where he arrived at age 10) a definite Minnesota Swedish accent.

My recollections of my first course with him, in 1926, are of a clear and interested teacher rather exacting but fair, whose lectures were well organized. He had a strong and slightly unusual sense of humor which he kept well concealed. Though well organized in his lectures he was also flexible and I remember a discussion of the fate of various injected substances in which he pointed out that some, though absorbed, were apparently not used and were excreted unchanged by the kidney. Some people claimed, he said, that the substances that gave asparagus its characteristic odor and taste was one of these, but he

doubted this as he had never noticed it. This elicited an immediate response from the class, most of whom evidently had noticed it. Professor Folin then stopped the lecture, took a count of those who had noticed it (about 85 percent) and of those who had not. He said he evidently had been wrong in doubting the claim, and suggested that some student or students make a little study to discover whether this 85 to 15 percent was due to a "blind spot" in the olfactory sense of 15 percent of people or a difference in absorption, or a difference in metabolism. He then returned to his lecture.

Professor Folin considered the laboratory part of the course important and he was usually on hand throughout the laboratory sessions to see what was going on and to answer questions. James M. Faulkner '24 has provided a delightful description of Professor Folin watching a student at the bench next to Faulkner doing a titration. In those less affluent days the burettes used by the students did not have stopcocks, but were provided with a bit of rubber tubing with a glass bead occluding the lumen about halfway down the tube. By squeezing the tube at the point where the bead was, the circular lumen became an ellipse and the fluid could run slowly past the bead. A little, though not much practice was needed to operate it satisfactorily. On this occasion, the student, whose name was Fuller Albright '24, flustered by having the professor watching him, milked the rubber tubing too hard and pulled it off the burette with the consequent spilling of the reagent and loss of the titration. The professor walked off audibly muttering, "Oh what a stupid boy! Oh what a stupid boy!" Professor Folin could be wrong on occasion.

Professor Folin was an ardent golfer and played well. One Monday during my research period with him, he invited me to dinner (his family was away) and told me of the close shave he had at golf the day before. He had a class of seven graduate students, six of whom had done very

well in the class and on the examination, but one had only got a C. He invited them all to come out and play nine holes of golf with him on Sunday. After discreet inquiries as to



Dr. Folin

how well they played he concluded that it would be safe to enliven the game a bit by offering to raise their mark in the course by 1 percent for each stroke by which they beat him. The six who had done well in the course were all mediocre golfers, but unfortunately, the one who had done poorly was excellent at golf and was three strokes ahead of Folin at the seventh hole. The appalling prospect of having to raise him to a B began to loom. Fortunately, this student got into a trap on the eighth hole and took three strokes to get out, and was so flustered that Folin finished the nine holes one stroke ahead of him.

I think it was that same Monday evening that he discussed the differences between the administrations of President Eliot and President Lowell, both of whom he considered outstanding men. He said that when President Eliot had a plan he wished to have adopted he would look around the room to see if the chief opponents were present. If they were not there he would never bring up the plan. President Lowell would also look around for the opponents

and if they were not there he would always bring it up. Professor Folin added that President Eliot's method was probably feasible only with a small faculty, such as Eliot had.

THE last long evening I spent with him was late in the summer of 1928, I believe. I was about to go to Sweden for a couple of months and he began to tell me about his boyhood there. He was very specific and evidently remembered it in great detail and with feeling.

He was the fourth or fifth child out of eight whose father owned a small farm in the rocky and relatively unfertile part of Sweden that lies just east of the southeastern corner of Norway. The farm would scarcely support them and the oldest son went to a cousin in Minnesota when he was about sixteen. Their father died some two years later when Otto was just eight.

At that time the Swedish laws were quite severe on illegal hunting and poaching, but the laws also provided that no act of a child under ten could be considered criminal nor could the child be punished in any way except by the parents. Otto, then barely eight, began to provide practically the only meat or fish the family got, and did it by poaching. He caught rabbits and birds in snares, and fished in and out of season in the streams and ponds, some of which were the protected preserves of the wealthy landowners.

He observed the habits of the wardens and game-keepers and went out just after they came in, at perhaps 8:00 p.m. in the winter and 11:00 or 12:00 p.m. in summer. He hunted with snares or traps or fished until the returning light made discovery too likely. He said that the "gädda," a fish of the pike family which often weighed three or four pounds provided the major part of his spoils, and he described to me in exact detail the most usual and successful of his methods of catching them. These fish, when larger prey is not at hand, spend a good

deal of time among the reeds nibbling slowly at the algae, eggs and larval forms attached to the stems of the reeds in the shallow water near the shore.

Otto would take a piece of rather fine iron wire and form it into a noose five or six inches in diameter. The wire should be small but able to stand a pull of about 20 pounds or so, and preferably it should be just a little rusty so as to be inconspicuous in the brownish algae. This noose was tied to a stout five or six foot stick and slowly lowered into the water, and even more slowly lowered between the mouth of the pike and the stem he was nibbling at. Success was more likely if the fish had started at the bottom and was working up the stem as then the noose could be held still against the reed until the fish's head was in the middle of it. Then, also very slowly, the noose was slipped back over the head until it was just behind the gills when a sudden upward jerk would usually land the fish well up onto the bank.

This method could only be used when there was some light, either at dusk or dawn or with a bright moon. It was advantageous not only because it was productive but because a small boy lying still, deep among the reeds, was far less likely to be seen than one walking along the shore and casting in the usual way.

He also set snares for rabbits and birds (ptarmigan, if I remember correctly) and believed that in the 60 or 70 weeks during which he followed his profession he had snared perhaps 20 rabbits and 10 birds.

He was caught, if I remember correctly, six times, three of them during the first two months of his activities before he had sufficiently studied the habits of the gamekeepers. Twice when caught he had only his equipment which was confiscated. The other times he had fish or a bird which was also confiscated as well as the equipment.

He thought he had averaged three or four nights a week out for roughly five to six hours, and usually covered from three to eight miles. How-

ever, there were many weeks during each of the two winters when he couldn't get out at all — either everything was frozen and nothing stirred, or the snow was so new that it was too easy for the gamekeepers to track him. School had been tolerably easy for him before he had entered upon his new and somewhat informal profession, but then it became difficult. He lost interest and had a tendency to fall asleep in class, and by the age of nine and a half, he had reached the bottom of his class. As he approached ten he started to teach his painfully acquired skills to his younger brother. However, by this time the older brother in Minnesota was able to send more money home and the younger brother did not follow Otto's profession. The older brother also suggested that Otto join him in Minnesota, feeling that his poor record in school and his general reputation might be a handicap to him in Sweden.

Thus, Otto, then just over ten years old, arrived in Minnesota, in a town of about 5000 (whose name I have forgotten) and his brother met him at the train. On their way to his brother's house, a fire engine tore by, painted bright red and belching smoke, sparks, and flames. It was drawn by three large horses at a full gallop, while half a dozen men clung to the sides of the wagon struggling into rubber coats and clanging furiously a large bell of brass.

On the spot, Otto resolved to be a fireman and asked his brother how to go about it. His brother replied that the first essential step was to be known as the brightest boy in the class in school — a task to which the younger brother applied himself so diligently and successfully that in his last year one of his teachers insisted that he should go to a University and succeeded in getting some scholarship aid for him to do so.

Otto Folin received the S.B. from the University of Minnesota in 1892. He then studied at the University of Chicago and received the Ph.D. degree in 1898 and the Sc.D. in 1916. He also received an Sc.D. from Washington University in 1915. In 1918 he was awarded an honorary M.D. degree from Lund.

Folin made use of the colorimeter designed by duBoscq to measure the excretion of creatinine in the urine. The ease and rapidity with which his gravimetric method could be applied soon caused creatinine and its role in human and animal biochemistry to become the most investigated substance of the period. Folin, and others following after him, began to turn out a continuing

stream of rapid analytical procedures, principally colorimetric, whose usefulness in physiological studies steadily increased.

With the publication of his "System of Blood Analysis," Folin's methods stimulated hospitals to inaugurate or magnify the use of chemistry in clinical diagnosis. Young men the world over began coming to Harvard to learn his methods. Although he is remembered as the leading method maker of his era, his real interest was not in method formulation, but in the physiological problems he wished to study. The chemical data he collected, which brought him fame and the Hamilton Kuhn Professorship at Harvard Medical School, are still valid and fundamental.*

* Excerpted from a report by the late
Harry C. Trimble, M.D.



Since 1812, The New England Journal of Medicine has played its role in medical circles—reporting the progress of medicine to physicians and medical students throughout the world.



The New England Journal of Medicine

10 SHATTUCK STREET, BOSTON, MASSACHUSETTS 02115

Relief for Manpura

by LINCOLN C. CHEN '68

AND JON E. ROKDE '67

MANPURA is one of the many small islands off the southern coast of East Pakistan. Like many of its neighbors, Manpura is a char, formed by the black silt carried down the Ganges and the Brahmaputra into the Bay of Bengal. Only a few feet above sea level, the contour of this 20 square mile island is constantly being eroded and reformed by the tides. Although isolated and exposed to the harsh sea, population pressures in East Pakistan, a province of 75 million people compressed into an area the size of Illinois, have forced Bengalis to settle on what many consider to be an uninhabitable island. The fertility of the land, however, more than makes up for the hardships. During the monsoon season (June to September) fresh rains wash the saline content from the soil, making Manpura one of the most productive rice-growing regions in East Pakistan. Despite the handicap of having only one crop per year, the island has had a yearly surplus of rice to export to the mainland.

The people of Manpura are of hardy, rugged stock; short, dark, lean yet strong. Life evolves around the "bari" system, in which each family and its male descendants join to form one unit separated from its neighbors by the expanse of rice paddies. Each bari is a totally self-sufficient unit with a traditional division of labor among its 20 to 40 members. Women, in keeping with Muslim culture, practice "purdah," a custom of seclusion to prevent contact with other males. Each family usually lives in a bamboo and thatch hut; wealthier families use corrugated iron sheets for roofing. Outsiders and sometimes even neighbors are viewed with suspicion and mis-

trust. A small parcel of land averaging two to three acres provides the economic backbone for each family. These small holdings are divided by dirt walls a foot high, and violent disputes involving land ownership are common. Although most inhabitants are Muslim cultivators, a small minority are non-landowning Hindu fishermen. In addition, itinerant laborers are imported to the island during the harvesting months of October and November.

On the night of November 12, 1970, the center of the worst cyclone of the 20th century swept across Manpura. Although weather forecasters had predicted the course and magnitude of the storm, few Manpurans were sufficiently warned because of poor communications. Cyclones frequently threaten the coast, but their destructive force is generally dissipated at sea. Just three weeks earlier, the islanders had been warned of a cyclone, but it caused relatively little damage.

The destructive force of the cyclone can hardly be imagined. Winds

up to 150 miles per hour tore through the Bay of Bengal on the crest of a rising tide, whipping the waters into a tidal bore. The inhabitants, asleep, unaware, and unprotected in their thatch houses, were suddenly and violently swept into the turbulent waters. Many found themselves clinging to sharp thorny palm trees or wooden debris. The full height of the rising waters eventually peaked at 20 feet, later confirmed by the observation that rice straw, clothing, and even corpses were found hanging at this height in trees. Only after the recession of the water some 10 hours later were the survivors able to assess the disastrous consequences. Of the island's 28,000 permanent inhabitants and an unknown number of itinerant harvesters, only 12,600 survived. The most vulnerable were the weak, children, women, and aged. Fewer than 1,000 under the age of 12 survived. Although the exact number before the storm is unknown, children under 12 usually comprise 40 percent of the total population in East Pakistan. All the harvested rice (approximately 50 percent of the total crop) was swept away. Fifty percent of the remaining crop was destroyed by salinity. Shelter, food, clothing, tools, and domestic livestock were totally lost.

In Dacca, the capital of East Pakistan, less than 200 miles to the north, the cyclone's impact was mild. Those

Destruction caused by cyclone on a "bari."



of us working at the Pakistan-SEATO Cholera Research Laboratory continued our normal activities unaware of the magnitude of the disaster. Even in the local press the full scope of the tragedy did not become apparent until the third day after the cyclone. That day's newspapers described a situation of horror, confusion, and tragedy while fresh reports of exposure, starvation, and epidemics of cholera and typhoid were widely disseminated.

Undaunted by the scope and magnitude of the disaster, several of our wives and their Pakistani friends insisted that a small private group could give help directly by concentrating its efforts in one small area. They began energetically to solicit money, food, used clothing, and supplies. Headquarters were established in Dacca and in Chittagong, the seaport most accessible to the affected area. Volunteers were recruited, purchases negotiated, shipping arranged, and governmental relief agencies contacted. The myriad of preparations necessary to sustain an emergency medical and general relief team were completed in two round-the-clock days. The first group of ten volunteers (including the authors, Alfred Sommer '67, Richard Guerant, BCH, and Geoffrey Sharp, HMS faculty, who was consulting at the laboratory) flew to Chittagong. After a two-day voyage by LCT landing craft and native fishing boats, the group landed on the northern tip of Manpura with five tons of relief supplies. This char island had been chosen because local reports indicated that relief efforts there were minimal. Linked to the mainland only by small sailboats and hit by the center of the storm, Manpura was one of the areas in greatest need.

The beach was littered with decaying corpses and carcasses. The survivors, stupefied and not comprehending or accepting what had happened, were still in a state of physical and emotional shock. An initial, cursory assessment indicated that contrary to widespread opinion, water supply was not contaminated and starvation, though threatening,



Waiting for relief supplies.

had not yet occurred. There were no epidemics or medical emergencies, not even the spectrum of medical problems normally encountered in rural East Pakistan. Only the fittest had survived. Medical problems related to the cyclone were confined to what we called the "tree syndrome" — severe abrasions of chest and inner surfaces of the arms and thighs from clinging to sharp objects or palm trees during the tidal bore. Unfortunately the most severe cases brought to our attention were the result of accidents rather than the storm. Survivors frantic to get their share of relief goods chased planes and helicopters as they made low runs randomly dropping heavy relief bundles. Two victims of air drops were carried to our camp, one semi-conscious and hemiparetic and the other with back and neck injuries. Both were eventually evacuated by helicopter to a field hospital.

The major concern for both physician and laymen alike, therefore, focused on supplying necessary food, clothing, blankets, and shelter. A distribution line cordoned off by rope was formed as hundreds of ragged survivors streamed across the paddy fields to receive approximately one pound of rice, a single article of clothing and a small supply of kerosene. To prevent duplication,

a black magic marker line was drawn on the right hand of all who were served. By the middle of the second day, approximately 3,500 hungry people had gathered around the camp, grimly aware of our dwindling supplies. Suddenly, the distant sound of a small crop duster plane brought us all to our feet. On its first run at 50 feet we saw one of our wives frantically waving from the co-pilot seat. She dropped a message indicating, much to our delight, that planes and helicopters would be coming in force. With code flags (W=water, F = food, C = clothing, P = people) we spelled out our need for more food and volunteers.

As the plane made repeated runs dropping food and clothing, chaos broke out among the hungry survivors. Bags were torn open as puffed rice, biscuits and dried milk were ravenously consumed on the spot. A frank talk in Bengali with the village leaders convinced them that a repeat performance would discourage further drops and prevent us from assisting effectively. A yellow sari was cut into strips for armbands and a group of reliable local men was chosen to insure orderly collection and distribution of relief goods. Tons of supplies were eventually dropped onto the quarter mile drop zone and all goods were carried by local volunteers to a central distribution area. All those present received a share, but those from distant areas, the weak, and the infirm were not being reached. In addition, we were told that Muslim women practicing purdah were reluctant to leave their homes, even when they faced starvation. A more permanent, self-running distribution system was clearly required.

A meeting of the village leaders for all of Manpura Union, a political unit consisting of the two adjacent char islands, Shakuchia and Faissuddin, was called. The Union Council members of all 16 wards walked for as long as a day to reach our camp. At their request, our efforts were directed toward the entire Union to insure that distribution reached all survivors. Over the next week, three

camps approximately seven miles apart were established along the length of the Union. All private, government, and foreign relief supplies were gathered at one of the three distribution centers. Each ward leader compiled an accurate census. The share to each family depended solely on the number of surviving members. Falsification was eliminated by cross-checking the list in the presence of the entire ward. Those who inflated their number were exposed by their neighbors who were anxious to protect their own fair share.

Local volunteers were anxious to assist and joined to pitch tents, cordon off a central supply depot, and clear air drop and helicopter landing zones. Communications between camps was achieved with two speed boats and walkie-talkies. At each camp daily inventory was made and shares were apportioned to each ward on the basis of population. Each ward congregated at the distribution camp at a specific time to receive its supplies. At first, because of limited supplies, distribution was made daily. As the supplies accumulated, distribution was made every three or four days so that the survivors could continue to work in the fields.

Progress on Manpura depended entirely on the wives in Dacca and Chittagong. From modest offices established in homes, they worked virtually round-the-clock to insure delivery of the necessary supplies. Top priority was given to blankets, tents, clothing, and food. Supplies which were not available from official sources were purchased from the local market with our small resources. Field communications from Manpura to Dacca and Chittagong were maintained by helicopter.

The wives persuaded many pilots to fly supplies and personnel to Manpura and return with daily field reports of progress and requirements. The wives energetically went to airports, government offices, supply depots, and other voluntary agencies to draw attention to specific needs and to the existence of an organized

distribution system on Manpura. Packing of goods, loading of supplies, arrangement of trucking and shipping were personally supervised. They continued to solicit money locally and from abroad and recruited additional volunteers to go to the island.



Rice being wrapped in Bengali pants.

Contributions, initially from volunteers and their friends, increased from private appeals to overseas friends who were anxious to help. Mrs. Jane Sharp coordinated an appeal for funds in Boston and Robert S. Gordon, Jr. '49 solicited contributions in Bethesda. By chance, a delegation from USAID landed on Manpura during a tour of the devastated region. They were sufficiently impressed that they promised to give us whatever was necessary to sustain our efforts. In addition, they promised to match all our private contributions on a two for one basis. These USAID contributions have totalled approximately 300,000 rupees (five rupees per US dollar). War on Want from United Kingdom contributed 3,000 pounds. A private German relief organization named Bread for the World was seeking to support private efforts. After reviewing our project, they committed three million Marks (approximately \$900,000) to fund the work for the next year.

From this initial effort, we adopted a name, HELP, for Heartland Emergency Life-saving Project (Translated from Bengali, Manpura means heartland). Although the initial impetus for the project was the immediate threat of the disaster, a greater opportunity became clear. Not only were the local people desirous of rehabilitation, but the natural disaster had so shaken the existing social, cultural, and psychological pattern that change could be introduced without resistance. The confidence and camaraderie between HELP and the people of Manpura would permit our organization to assist in development without the suspicion or mistrust usually found in rural Bengal.

Many volunteers, specialists in agriculture, housing, water resources, engineering, and cooperative rural development, were anxious to join together to formulate a multidisciplinary approach to rehabilitation. A soil expert analyzed representative soil samples from Manpura and concluded that despite the tidal bore, salinity would not be a major problem during the next harvest. Water engineers surveyed the borrowpits (small domestic ponds) and six pumps were sent to enable immediate cleaning. One specialist walked the length of the island and drew blueprints for construction of a road. A missionary who had worked in Bengal for over 30 years began construction of 20 new fishing boats of local design. A rice expert demonstrated a method of threshing the remaining rice with pedal threshers which were purchased by HELP. The possibility of introducing high-yield IRRI-20 rice to the island on a small trial basis next year was explored.

Through these people, a comprehensive program for development of the island was formulated. An organization was, however, necessary to assist with its implementation. HELP registered itself as a voluntary association without restriction of membership and elected a Board of Governors to formulate policy. A small professional staff, often volun-

teers who had left their permanent jobs, was hired to carry out the program.

The backbone of this program is cooperatives. Borrowing from the successful rural development projects in Comilla and Rangunia, groups of 20 to 40 neighboring families with common vocational interests have been formed to tackle their economic recovery together. Through cooperatives, individual families pool resources, equipment, and manpower to permit introduction of mechanized agriculture, fertilization, irrigation, and specialization by members into other economically productive areas such as improved poultry and home industries. These primary societies have joined to form the Manpura Central Cooperative Association to provide the local leadership for the island's future. HELP is assisting by providing the personnel and finances to initiate and carry out projects. Capital outlay is in the form of loans; repayment returned to the Central Cooperative is used for future projects.

Reorganization of social and economic structure is a long and difficult task. It is a job that the people of Manpura and East Pakistan must do for themselves. HELP can only guide and assist in the programs the people choose to follow. Foreign interest and financial support will continue to be required.

The immediate and generous response of the world to this great disaster was, in fact, most impressive. Planes from many nations carried huge quantities of relief supplies to East Pakistan. At the same camp, blankets from Iran, rice from Communist China, and wheat from the United States were gathered together for distribution. Helicopters from Germany, France, Russia, England, United States, and Pakistan dropped goods throughout the devastated areas. It was our feeling that much of the foreign press criticism regarding the governmental inefficiency in relief operations was unjustified. For a country still grappling with problems of under-industrialization, over-

population, and malnutrition, one could not expect an effort free from flaw. Faced with a tragedy involving four million people (six percent of East Pakistan's total population) and in spite of severe limitations such as poor communications and inadequate transport facilities, East Pakistan tackled its problem.

Although the world's response was impressive, it was not always appropriate to the local situation. Even in Dacca there was no clear understanding of what supplies were needed. One country airshipped eight-ton water distillation units to provide pure drinking water. Not only was contamination of water supply a minor problem, but these units required electric power not available on these islands. Another country flew in complete field hospitals ready to perform sophisticated surgery when the problems were essentially nonmedical. Tons of medicines such as laxatives, intravenous fluids, vaccines, and water purification tablets were rushed to Pakistan when tents, blankets, and food were required. High protein concentrated canned foods were brought in without appreciation of the fact that Bengalis are rice eaters and would not appreciate foreign foods, even during periods of hunger. Rice and lentils alone would have been sufficient both in terms of calories and protein. One country sent experts to establish orphanages. No evaluation was taken to determine the number of orphans. As we discovered, young children were among the most vulnerable to the storm, and few children were left without at least a distant relative who were anxious to adopt them.

It should be stressed that private relief activity required the active participation and cooperation of the local inhabitants. A working knowledge of Bengali and an effort to respect village customs were helpful in breaking down many barriers that often discourage outsiders. Although as physicians we were rarely called upon professionally, our role of coordinating foreign, Pakistani and local resources into a coherent

program was rewarding and educational.

Already as urgency fades, foreign and local concern declines. To the world the emotional impact of the disaster has gone, but the people of Manpura and the entire devastated area must face the consequences of this storm for years to come. Houses must be built, fields plowed and harvested, and means of protection from the next cyclone planned and executed. The tragic living conditions found on Manpura after the cyclone are by no means unique. The problems of poverty, malnutrition, overcrowding, and total lack of medical care can be found in virtually every village of East Pakistan.

On March 25, 1971 a civil war erupted in East Pakistan. In early April, Drs. Chen and Rohde and their families were evacuated to the United States. Nevertheless, IHELP, under the supervision of Pakistani staff members continues to administer relief in Manpura. Temporary bamboo shelters sufficient for the monsoon rains were provided. Construction has been completed on five fishing boats, and these boats, with the necessary accessory equipment, have been delivered to the fishing cooperatives. Five hundred new plows with 4,000 draft animals were made available to the cooperative for plowing the monsoon crop in June and July. Assurances for continued support have been received from donating agencies, and HELP continues to pursue the goal of development for Manpura. Unfortunately, the remainder of East Pakistan, engulfed in the ravages of civil war, faces famine and continuing man-made disaster.

See accompanying editorial on page 20.

Dr. Chen is affiliated with the Cholera Research Lab at NIH; Dr. Rohde is a resident at Boston's Children's Hospital. This article describes their unofficial activities in East Pakistan.

COMMUNITY MENTAL HEALTH

by DONALD J. SCHERL '61

FROM its inception in 1910, the Massachusetts Mental Health Center has represented, through its charter and its organization, a link between state-supported services for the mentally ill and Harvard-affiliated education and research for health science students and professionals-in-training. Thus the Center, from its early days recognized the interdependence of service, training and research.

Recently, this fact has been reflected in the assignment to the Mental Health Center of a specific, geographically-defined service area. Surrounding the physical facility of the Massachusetts Mental Health Center, this area includes some 200,000 residents who reflect a wide diversity of background by virtue of religion, economic and educational status, race, and age. The area links the suburban and wealthy Town of Brookline with neighboring portions of the core City of Boston. The area includes a high percentage of both elderly persons and students. While there are many wealthy families in the area, it also is among the top five most needy areas in the state in terms of medical aid to the aged, disability assistance, and aid to families with dependent children.

To facilitate the ability of the Mass. Mental Health Center to understand the mental health needs of the service area and to respond to these needs with meaningful programs, a Community Mental Health Service was inaugurated as a separate unit in July, 1967. Funds to staff community programs were provided on a matching basis by the State Department of Mental Health and the National Institute of Mental Health.

As a first step in gaining understanding of the needs of the community, we attempted to locate the agencies, institutions, and groups

that were serving a "helping" function for those residing within the service area. We identified some 400 such agencies including 70 churches, 20 hospitals, 55 nursing homes, 68 grade and high schools, and 13 social agencies. The sheer numbers involved implies a degree of complexity and diversity which makes it difficult to organize, for any single patient, the best combination of services and resources most suited to his needs. Further, while they seem to be numerous, available services are in fact inadequate. Patients often search through a maze of conflicting services, eligibility requirements, and waiting lists before receiving specific help, if they receive it at all.

In establishing program priorities, we consulted with a number of these agencies, met with many community groups, and received the advice and counsel of a 21-member citizens' Area Mental Health Board. The programs outlined below represent a translation of the needs of area residents into specific project activities, within the limitations of our staff and budget. Top priority is given to those neighborhoods of lowest income, since these areas are thought to have the highest rates of serious mental illness and have received the least adequate service in the past.

Neighborhood Services

We have formed inter-disciplinary teams, with a preventive orientation, to focus on three neighborhoods within the larger catchment area: Allston/Brighton, Jamaica Plain, and Mission Hill. The staff of each team relate to their neighborhood as a whole, with no defined or specific functional responsibility. Involvement with local citizen's groups and committees help them to know and be known to a cross-section of the population, and to become aware of what local peo-

ple view as needs and gaps in service. Naturally, each neighborhood varies and presents its own problems about implementation of mental health services. One constant has been the need on the part of our staff for a high level of flexibility, persistence, initiative, and ability to listen.

Delivery of service takes many forms, and is determined by the needs and interests of those with whom we are collaborating in the community. In each neighborhood, we utilize four basic modalities.

Mental Health Consultation is focused upon specific cases as well as broader programmatic and administrative issues, and involves visiting nurses, teachers, youth workers, police, and clergy.

Training and Education includes development of workshops, seminars, "rap" sessions, parent groups, youth groups, etc.

Program Planning and Development involves work with individuals and groups to consider ways in which new mental health services may be initiated and/or old services made more useful. In each of the neighborhoods, this has included the development of a drug-abuse program including the formation of local citizen committees, surveying needs with regard to alcohol abuse, and engaging with community groups in comprehensive health planning.

Clinical Services are now available to area residents on an absolute first priority basis, and include the full range of hospital-based services (in-patient, day-care, outpatient, emergency walk-in). Clinical services for patients in their own homes, on an aftercare basis, have been made possible by assigning one psychiatric nurse from each of the four in-patient wards to perform this community function.

The range of institutions, agencies, and groups with which we have been involved includes schools, neighborhood anti-poverty action programs, Head-Start programs, neighborhood health centers, drug committees, youth workers, halfway houses, and tenants' councils.

In all, we provided some 2,000 consultation visits last year.

In addition, a number of programs have been established to serve special groups within each neighborhood. There are four nursery school classes for retarded youngsters, and one day-care class serving multiply-handicapped, retarded children. A pre-school class for 15 children of low-income families living within walking distance of the hospital has been established at the Center. Called the Neighborhood Day School, the class is designed to foster self-esteem and creativity for the student and his parents as well as offer our residents in child psychiatry the chance to work as participant-observers with healthy children.

Services for the Elderly

With the very large number of nursing home beds (2,342) and of elderly persons (over 30,000) in the area, the need for specialized services for this population seemed apparent. As a first step, the Mental Health Center opened its clinical services to these patients. Their care, both in-patient and following hospitalization, has required the development of new skills. We have formed an inter-disciplinary geriatric unit of three full-time professionals (psychiatrist, nurse, and social worker). They work in the out-patient department and within the hospital as consultants about the care of the elderly. They also provide both direct services to people in their own homes, and consultation and training services for nursing homes, golden age clubs, housing projects, and other specialized agencies serving the elderly. Last year the Geriatric Unit worked with 150 patients and performed 300 consultations including 209 visits to area nursing homes.

One problem faced by the elderly population, similar to that faced by psychotic patients a generation ago, is the low priority placed upon their treatment. The Geriatric Unit was formed as a separate division to help transform the disparaging attitudes held by many caregivers toward the

elderly, into attitudes of respect; older people must be viewed as valued individuals capable of benefiting from a proper and considerate therapeutic regime. Thus the Unit is a functionally defined program rather than a separate building or clinic.

Walk-In Emergency Service

For the last several years, the Center has provided an emergency walk-in service for the greater Boston Metropolitan area. Patients are seen without appointment on a 24-hour basis. Each year between 5,000 and 6,000 patients avail themselves of this service. The Walk-In Service is staffed by social workers, psychologists, and psychiatric residents. Each spends one scheduled day per week providing these services.

Legal Medicine

We have grouped together a number of problem areas that share the common rubric of behavioral deviance. These problems are defined as much by social policy as by psychiatric symptomatology. Thus, we have grouped together programs dealing with delinquency, drug abuse, and alcoholism within a single community-focused unit which also bears responsibility for running court clinics in the several municipal courts that fall within the service area. Two such court clinics are now in existence, one in Brookline and one in Allston/Brighton. The Mental Health Center provides clinical and consultative psychiatric services in

both settings. Last year, 96 patients were seen through the court clinics, approximately two-thirds of whom were seen for psychiatric treatment. We consulted with court staff about an additional 130 cases whom we ourselves did not see.

A program focusing on the problem of drug abuse as it relates to youth, with particular reference to low income housing projects within the area, is being developed in collaboration with a number of the community agencies and neighborhood groups referred to earlier. The Mental Health Center accepts community residents for detoxification and will link these individuals to self-help and other existing drug programs pending the development of an area-wide effort. The issue of drug dependency has been a pressing one here, as elsewhere throughout the country, and to some degree it has diminished the attention available for associated problems including alcohol abuse and delinquency.

Comprehensive Health Services

In each of the neighborhoods, groups of citizens, concerned with the problems of primary and comprehensive health services in their neighborhood, have been formed. Our long-range view predicates the interrelationship of mental and physical health services in a single delivery system, the primary care element of which will evolve on a neighborhood basis. Toward this end, we have associated ourselves with a number of neighboring Harvard-affiliated



hospitals as well as several other local institutions.

The Model Cities Family Life Center has been developed under the auspices of the Boston Model Cities Administration. It serves a group of 10,000 residents in one section of Jamaica Plain. In addition to Mass. Mental Health Center, the program brings together the Children's Hospital Medical Center, the Boston Hospital for Women, and the Peter Bent Brigham Hospital. Mental health professionals from our center are stationed at the Model Cities facility (currently a set of trailers) where they provide both consultative and direct clinical services. The community-located health center has been linked to one of our four in-patient services and our residents spend several hours each week working within the Model Cities neighborhood.

The Martha Eliot Family Health Center is supported by Children's Bureau funds and was launched under the auspices of the Children's Hospital and the Boston Hospital for Women. Recently, the Peter Bent Brigham Hospital has developed adult services at the Center and Mass. Mental Health Center inaugurated a mental health program similar to that now in effect at the Model Cities Center. Here too a link will be established with one of the in-patient services and an additional group of first year residents will spend a small portion of their time (half day per week) working in the community.

Southern Jamaica Plain Health Center is a small program just getting underway with the help of the back-up hospitals linked to the two other Jamaica Plain health centers. At present, we are providing a part-time psychiatric social worker for this project but we hope to see the effort evolve into a comprehensive neighborhood health center.

Fidelis Way Information and Referral Center is located in a low-income housing project in the Allston/Brighton neighborhood. We provide consultative services for the staff of the Center and direct services for a

mothers' group. In addition, we have been working with a neighborhood committee and with several local hospitals to develop a health center for Allston/Brighton that will include portions of several publically financed but scattered health services already available in the Brighton community.

With regard to Health Planning, we have joined with many of the other major Boston hospitals to help the City implement a health districting concept. In addition, we have joined with the State Department of Public Health, the City of Boston Department of Health and Hospitals, and the Town of Brookline, as well as many of the agencies already mentioned, to launch an area-wide Boston-Brookline Health Resources Organization as an incorporated body. This organization will give thought to the issue of comprehensive health services for the same geographic area served by the Mental Health Center. The corporation is designed to bring together health professionals and community consumer groups, private and public agencies, the City of Boston, the independent Town of Brookline, as well as state-supported programs, into a single collaborative and cooperative body. Such an experimental umbrella device may permit the development of a variety of delivery mechanisms at the neighborhood level with a single funding mechanism to facilitate area-wide programs.

Professional Educational Activities

The entire Mental Health Center serves the residents of its service area on a first priority basis. Admission policies have been altered to conform to this end and to permit greater flexibility with regard to groups of patients previously not treated including the elderly and drug dependents. This has enriched the training program for our residents and other professionals-in-training. In addition, the 24-hour walk-in service has been revised to represent a day-long experience in diagnostic and short-term psychiatry. Residents in their second year now

spend only two days each week completing required activities and have three days available to elect clinical programs of their choice which include the community programs previously described. A quarter of each group of first year residents also have a community experience focused through one of the neighborhood health settings. This element of the training program involved a single in-patient service last year and will involve two of the four in-patient services next year.

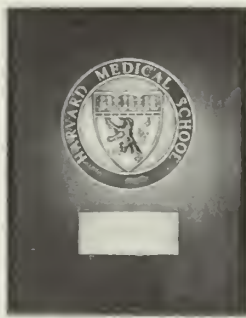
As one of the Harvard-affiliated group of hospitals, the Massachusetts Mental Health Center has recognized the importance of service-focused activities both for their own sake and for the role they play in education and research. In this sense, we see our increased service obligations as complementing and enhancing the education of students and professionals-in-training. In developing a community program at a teaching and research facility such as the MMHC, our basic premise is: To teach individuals their profession, one must demonstrate its performance at a level of excellence. The organization and delivery of high quality services provides the best context for high quality education.

The programs described represent but a beginning in the design of a genuinely comprehensive health and mental health program for our service area. It will be some years before a full judgment can be made about the value of such programs, on the one side, as service to community residents, and on the other, as part of a total service and educational design. Basic to all of these activities has been a commitment on the part of the Mental Health Center to work and collaborate with those living within the service area, with other institutions and agencies serving the residents of the area, and with the various State and local health and mental health authorities. Unquestionably, there is a great deal more that needs to be done, but by linking the mental health center to the community that surrounds it, a start has been made.



MEDICAL SCHOOL CHAIR

Famed for quality craftsmanship, and selected northern hardwoods, finished entirely in antique maple with crimson and gold insignia and gold trim, the Harvard Medical School chair is fast becoming a tradition. \$46 Cushion covered in red Dura-leather, \$11.



PERSONALIZED PLAQUES

Cast bronze Harvard Medical School emblem is mounted on solid hand-rubbed walnut, shaped as a shield or rectangle (both 8 1/2" x 11"). Graduate's name is engraved on the brushed sheet bronze nameplate. Engraving is filled with black inlay so letters appear in distinctive double outline style. Choose from four engraving styles. Excellent gift idea. Order from the Coop. \$18.95.



MEDICAL SCHOOL TIES

The Medical School shield is woven in a repeated pattern on plain backgrounds of red or black. Fine quality silk repp. \$6.

Harvard.



DIRECTOR'S CHAIR

Features the 3-color Harvard Medical School crest on heavy white duck and black or natural varnish finish on the sturdy, foldable frame. \$18.95. For more information, write for chair brochure.

**Nice
to
have
around.**



MEDICAL SCHOOL RINGS

Choose class ring with synthetic ruby or garnet; the Harvard Medical School crest is on one shank and the year of graduation on the other. Three letters engraved free. Priced at \$43.50. Harvard ladies' rings also available.

MB1069

**the
Coop**

Children's Medical Center
396 Brookline Avenue
Boston, Mass. 02215

- ☐ Medical School Ring with synthetic ruby \$43.50
☐ Medical School Ring with synthetic garnet \$43.50
(10K yellow gold with solid back)

_____(Three initials to be engraved.)

_____(The year of graduation.)

_____(Exact finger ring size.)

Please send to: _____

Address _____

Zip _____

Ordered by: _____

Address _____

Zip _____

Coop # _____

Charge
my Account # _____

Check _____

Make checks payable to Harvard Cooperative Society. Massachusetts residents — please add 3% Mass. sales tax. (Out of state residents — no tax except when delivered in Mass.) Prices subject to change without notice.

Approx. 30 days delivery from Gardner, Mass.; express collect, for Harvard Chairs. Shipping and handling billed separately.

- ☐ Harvard Medical School Chair Express collect. \$46.00
☐ Harvard Cushion Express collect. \$11.00
☐ Medical School Director's Chair \$18.95
☐ Red ☐ Black Medical School Tie(s) \$ 6.00
☐ Medical School Shield Plaque \$18.95
☐ Medical School Rectangular Plaque \$18.95

_____(Graduate's name to be engraved on plaque)

EDITORIALS

CENTURY of PROGRESS

The accession of Charles W. Eliot to Harvard's presidency in 1869, as recounted by Dr. Curran in the March-April issue of the *Bulletin*, inaugurated a golden era of progress in the Medical School, which has still far from run its course. Of particular importance was President Eliot's success in persuading Henry Pickering Bowditch to accept the professorship of physiology in 1871, and a succession of four George Higinson professors of physiology over the next century, with their singularly able colleagues, has kept the department at a high level ever since.

Otto Folin, about whom Dr. Forbes reminisces elsewhere in this issue of the *Bulletin*, was considered to be practically a genius in the field of biochemistry. He and Walter B. Cannon, who had urged his appointment to the faculty since the beginning of his own career as head of the department of physiology, constituted a team that brought the school to a peak in research and teaching in the basic sciences.

Dr. Forbes comments on Folin's dry humor and mentions his reaction to a mishap that Fuller Albright had experienced with a burette. A similar incident had some time previously occurred during a practical examination, when a brilliant but erratic student rushed up to the professor to ask a question, holding a Kjeldahl flask in each hand. As he arrived, he stumbled, fell flat, and brought his problem to an end by demolishing it. Helping him to arise though not to shine, Dr. Folin remarked: "Mr. Jackson, if you would use your feet less and your head more you might in time become a distinguished chemist." On another occasion when the class was assembled in the amphitheatre prepared to take notes on the coming lecture, the professor appeared,

walked to the desk, and silently surveyed his audience. He continued his survey minute after minute with the more sensitive of his students becoming uneasily embarrassed. Then, apparently undisturbed, Professor Folin said, "Gentlemen, I have forgotten the lecture," and retired.

The writer of this editorial comment, never designed to be a chemist, failed the final written examination by half a decimal point. Given a makeup he found that the necessary half point, and only that, had been added to his credit.

The first professor of bacteriology, Harold C. Ernst, was especially characterized by his resemblance to the Emperor Franz Joseph; he was succeeded by the scientifically distinguished Hans Zinsser. The senior pathologist, William T. Councilman, was followed by S. Burt Wolbach, supported by Frank Mallory at the City Hospital and Homer Wright at the Massachusetts General. The

bachelor, John Warren, tall, robust, almost overpoweringly dignified, was a professor of anatomy as well as university marshal; he was backed up by the brilliant Robert Green who not only expounded this far from defunct discipline but practiced gynecology and obstetrics, taught Greek at Simmons College, translated and published Latin odes and over a period of 50 years wrote a five-volume version of Arthur and his Knights of the Round Table in blank verse. And there were others of this century of progress who contributed to the strengthening of the sciences at Harvard, both basic and applied: a strengthening that was taken over by David Edsall as dean in the second half of the century, who further extended the science of medicine to its clinical application.

The success of this progress is evidenced by the number of Harvard-trained physicians and scientists who have gone out to administer medical schools or head their departments throughout the country. If this seems like blowing Harvard's horn, one must recall St. Paul's reminder to the Corinthians: "For if the trumpet give an uncertain sound, who shall prepare himself for the battle?"

THE THIRD HORSEMAN

The most common medical problem in the world today is hunger. In this century we have witnessed the extreme form of this condition in the many famines which have struck Asia (flood and drought), the Middle East (locust and earthquake), and Africa (Congolese and Nigerian Civil Wars). With accelerating population growth, mankind will repeatedly face famine for years to come. Nevertheless, early recognition and treatment can, as in the case of most medical problems, minimize and greatly alleviate the impact of famine. Such a challenge exists today in East Pakistan, where one of the most disastrous man-made tragedies of this century is unfolding. On March 25, 1971 a civil war erupted in East Pakistan, and the agricultural and economic dislocation following this

conflict has progressed unimpeded. Although hunger has not yet reached famine proportions, mass starvation threatens.

Despite the agricultural orientation of the economy, hunger and malnutrition are endemic to East Pakistan. The basic diet consists of rice, supplemented by curries made from vegetables, fish, and lentils. Meat and dairy products are a rare luxury, and fruit consumption is entirely seasonal. Intake of cooking fats and oils is scanty. Cooking practices often lead to substantial loss of essential nutrients such as vitamin C, thiamine, and niacin. Social customs further exacerbate the dietary imbalance. The best food is reserved for the adult working men while the women and growing children receive the leftovers. This may provide the

necessary energy for the wage-earner to support his family but neglects those who require special nutritional consideration.

East Pakistan now faces, for the first time in recent memory, reduced production in two consecutive years, and the largest food deficit since the Bengal Famine of 1943. Many factors have contributed to this rather bleak prospect. Hundreds of thousands of farmers have fled into India to escape injury and death arising from military actions against civilians. Farming operations have been crippled in many rural areas, especially in those border regions adjacent to India. Lack of fertilizer, pesticides, seed, and fuel for irrigation pumps has contributed to lower output. There has been a total collapse of the agricultural credit structure. Cessation of public works programs has resulted in wide-spread rural unemployment and shortage of cash. Government and private business have been at a virtual standstill.

Prognostication of an impending famine is hazardous, but certain historical perspectives will add to our understanding of current trends in East Pakistan. Causes of critical food shortage can be divided into four general categories: 1. Drought accompanied by dust storms and loss of seed. 2. Diseases such as fungus blight, pests, and locusts. 3. War and civil disturbances. 4. Natural floods and earthquakes. In addition, disruption of normal communication and supply routes can lead to starvation in deficit regions which are relatively proximal to food surplus areas. Even more striking is the presence of famine amidst adequate food supplies, caused by the collapse of local economies and the complete loss of purchasing power by the poor. Speculation in grain by large commercial buyers as well as small scale hoarding on a family level can turn a marginal food deficit into a raging famine. Although famine can usually be attributed to one major factor, it is often the simultaneous occurrence of several factors that complicate the situation.

Perhaps the greatest famine of

our lifetime was in Bengal in 1943. It is estimated that some three million people died of starvation. K.C. Ghosh has described the horror of that tragedy: "... mere skeletons covered simply with skin; some gasping for their last breath; mothers hugging their dying and dead children, unable, having no strength to weep or cry; some practically in delirium precedent to death a few minutes or a few hours after crying for a morsel of rice; . . . Haggard half naked women worn out for lack of food carrying rickety babies with dried up limbs and old wrinkled faces; small children with bloated bellies and ribs standing out . . ."

Mass starvation during the Bengal Famine in 1943 was accompanied by complete social and cultural disintegration; suicide, selling of children and wives into slavery, banditry, and disruption of existing family structure. Those who did not die from starvation faced epidemics of cholera, smallpox, malaria, and dysentery, spread by the breakdown of sanitation. From the villages, thousands of starving people poured into urban centers such as Calcutta in search of food only to die enroute or to be met with indifference and continued starvation.

One cause of the Famine was shortsighted governmental policy. The British colonial government minimized the repeated reports of food shortage prior to 1943. Despite the virtually complete elimination of food imports from war-torn Burma, exports from Bengal did not decrease proportionately. In addition, a large scale program of purchasing foodgrain for the army was initiated. In response to rising prices and food shortage, hoarding, profiteering, and speculation increased in the private sector. The entire problem was further exacerbated by the "Denial Policy" aimed at denying foodgrains and transport facilities to the enemy should they attack India. The impounding of some 25,000 boats handicapped the cultivation of the small islands in the Bay of Bengal, curtailed the fishing industry, and prevented adequate

transport of food from excess to deficit regions within Bengal.

The similarities between the Famine of 1943 with present trends in East Pakistan are striking. Some 2.9 million tons of imports will be required to offset the deficit in indigenous production, but the Pakistan Government has failed to acknowledge this crisis, much less initiate effective programs. Already, hoarding is taking place, and the market price of rice has risen sharply. Much of the existing food stocks have been taken to the military cantonments to feed the army. The malnourished state of the 7.5 million refugees who have fled into India attests to the deteriorating situation.

The critical period lies immediately ahead. Reliable estimates project that the current food shortage will affect approximately 25 million people; the landless labourer, deficit farmer, craftsman, factory worker, and urban poor. The number that will die of starvation is unknown. In any normal year, the prevalence of malnutrition increases progressively in the fall until harvesting and realization of the major crop (aman) in November. The present crisis compounding this seasonal variation of malnutrition may precipitate a famine of unprecedented proportions over the next three months.

What can be done? Recent experience in Biafra as well as current practices in East Pakistan have shown that military control of food supplies can be a powerful weapon of suppression. Bacteriological and biological warfare have been renounced by international convention. Starvation should similarly be outlawed on the grounds that it selectively affects children and the elderly. International opinion should demand that opposing parties in East Pakistan permit sufficient food to reach all affected civilians, regardless of their loyalties. Food distribution under close, impartial third party supervision can alleviate suffering and diminish, if not prevent,

Excerpted from an article in Lancet, Sept. 11.

wide-spread starvation. A sizable, neutral, international assessment and surveillance team should be permitted to enter East Pakistan in order: 1. to determine the geographic distribution of population in light of recent migrations. 2. to assess current stocks of foodgrains in both government and commercial storage facilities. 3. to determine the quantities and types of relief supplies required. 4. to evaluate the extent of damage and supervise the repair of communication and transportation facilities to be used for non-military purposes only. 5. to establish distribution centers accessible to water and air transport throughout the Province. 6. to formulate equitable procedures of rationing and distribution.

Lessons learned from the international relief effort following the cyclone of November, 1970, can be extended to the present situation. To

cover immediate needs, emergency food supplies should be flown to East Pakistan's nine operational airfields. Air transport must be supplemented by seagoing vessels, equipped to transfer foodgrains directly to smaller crafts while standing offshore. These small crafts can utilize the extensive waterway system to deliver supplies to regional centers. These procedures would circumvent the problems of congested ports and decreased rail and road capacity.

The opportunity to prevent a major famine is rapidly slipping away. Responsible members of the world community, concerned with human welfare, must insist that strong action be taken now. Unless we respond, the reports of famine in East Pakistan during the next few months will weigh heavily on our conscience.

LINCOLN C. CHEN '68

JON E. ROHDE '67

ALONG THE PERIMETER

FAMILY HEALTH CARE PROGRAM GETS MAJOR BOOST

A capital gift of \$700,000 has established the Theodore Schulze Fund for Pediatrics in the Faculty of Medicine. Income from the gift, presented by the Theodore Schulze Foundation of New York City, will be used to provide support for the Family Health Care Program at the Children's Hospital Medical Center, now under the direction of Joel Alpert, M.D., associate professor of pediatrics.

The Family Health Care Program, established in 1956, provides medical students, house officers, and postdoctoral fellows with special experience in the techniques of family practice. During the past sixteen years the Program has had an important effect in maintaining a balance between the teaching of hospital-based, disease focused medical care and of community-based, family focused care. The Program is concerned with the delivery of medical care to low income families and

serves 500 families that include approximately 1800 children.

One facet of the Program is to develop the necessary leadership for the establishment of similar programs throughout the United States. With the assistance of former fellows, programs have been instituted at the Universities of Rochester, Miami, Kentucky, and Cincinnati.

Another focus of the program is directed toward the overall effect to families that comprehensive medical care can have. Studies show that such programs can result in significant changes in health practices among low income families.

The pediatric fund honors the memory of Theodore Schulze, who died in December, 1962. Mr. Schulze's wartime efforts resulted, among other things, in a citation from General DeGaulle on behalf of the French Army. He established the Schulze Foundation, and used the income from it to benefit children.

HCSP FARES WELL UNDER EVALUATION

The Health Careers Summer Program (HCSP) closed its third summer of operation recently. This year, 114 minority students from 65 colleges and universities were enrolled in the program, which is a joint endeavor by the Harvard Medical School and School of Dental Medicine to encourage a substantial percentage of its enrollees to consider careers in the health professions. Eight students who were enrolled in 1969 are now in medical or dental schools, and 31 of those enrolled in 1970 matriculated this fall. Many more are planning to enter one of the allied health professions.

The National Center for Health Sciences Research and Development evaluated the program based on its first two years of operation. Part of this evaluation indicated that the coordination and operation of HCSP would be more effective if managed by the Harvard Summer School rather than the graduate professional schools. Accordingly, this year responsibility shifted to the Summer School, with Thomas Crooks, director of the Summer School, in charge.

Reid Jackson, II, who has left Harvard to become assistant dean at the University of Florida College of Arts and Sciences, was the coordinator of the HCSP. Assisting Mr. Jackson was Mr. Larry Browning, a candidate for a doctoral degree in science education at Harvard.

Robert S. Blacklow '59, assistant professor of medicine at the Peter Bent Brigham Hospital, is responsible for the role of the Medical School and Dental School in the HCSP. He and Mr. Crooks agree that in spite of the many attributes of the program, funding is bleak. Dr. Blacklow and Mr. Crooks mention that in 1972, the access to foundation funds necessary for the first three years of development will no longer be available. New sources of funding will be needed, and both agree that the sources must be federal and state

grants or funding from the institutions from which the students come.

The academic program of HCSP, which includes regular summer school courses in basic sciences with tutorials and clinical experience, has gone well, according to Dr. Blacklow and Mr. Crooks. All concerned with the program agree that to insure success, students must be encouraged to become active in the entire process. Applications to HCSP have risen each year, indicating an interest among minority students to avail themselves of the existing resources. Applications reached a peak

in 1971 with 843. Places were offered to 119 applicants.

Another major point in the evaluation of the HCSP dealt with the possibilities of establishing similar programs in other universities. The general conclusion was that programs could be developed if schools have an open enrollment summer school with strong science departments, if medical and dental schools with their affiliated hospitals and clinics are located near the core institution, and if students enrolled in the program are part of the general summer school environment.

DOCUMENTARY FEATURES A. BAIRD HASTINGS

Dr. A. Baird Hastings, Hamilton Kuhn Professor of Biological Chemistry, Emeritus, has been made the subject of the first in a series of documentary films sponsored by the medical honor fraternity, Alpha Omega Alpha. The series records the lives and contributions of great men in medicine and research during the twentieth century. The series is planned for distribution to medical schools and libraries for use as a teaching aid.

The film outlines Dr. Hastings' contributions to medicine and research, with particular emphasis on his studies of the acid-base balance of the blood. His many affiliations are also recounted in the film, among them the University of Chicago, Scripps Clinic and Research Foundation at La Jolla, California, and The Rockefeller Foundation. The work of Dr. Hastings on four NIH Councils, the war-time Committee on Medical Research of the Office of Scientific Research and Development, and the Committee on Biology and Medicine of the Atomic Energy Commission are included in the documentary.

Dr. Hastings now resides in La Jolla, California, where he is a research associate in the department of neurosciences at the University of California at San Diego School of Medicine and an appointee on the 28-member National Advisory Committee of the White House Conference on Aging.



Dr. Hastings

REHABILITATION DEAN

Richard M. Ryan, Jr. has been appointed assistant to the dean of the Faculty of Medicine for rehabilitation planning.

Mr. Ryan will work in close association with Sidney S. Lee, M.D., associate dean for hospital planning. He will be concerned with initiating plans to bring together medical and hospital resources of the Harvard medical community to better provide for the total care of physically disabled patients and to bring together related research and educational efforts involving HMS, the School of Dental Medicine, and their affiliated institutions. Particular emphasis will be devoted to the existing relationships between the Medical School and the West Roxbury Veterans Administration Hospital.

In recent years, Mr. Ryan has been engaged in the organization and coordination of study programs relating to continuing education in the field of dentistry in New England, to the establishment of an organ donor bank and uniform donor card system in Massachusetts, and to the development of a Comprehensive Human Services program in Brockton. As executive secretary of the Regional Hospital Planning Committee of Brockton, he worked with the department of health services administration at the School of Public Health to plan and develop a Comprehensive Health Planning Agency for southeastern Massachusetts.

Mr. Ryan received the A.B. degree in sociology in 1961 and the M.S. in social services in 1964 from Boston University. He also holds the M.S. and the D.Sc. in hygiene from Harvard.

ADMINISTRATIVE APPOINTMENTS

Four administrative appointments within the Faculty of Medicine were recently announced by Dean Ebert.

Leon Eisenberg, M.D. is chairman of the admissions committee. He will continue to serve as professor of psychiatry and head of Harvard's department of psychiatry and director of clinical psychiatry at the Massachusetts General Hospital.

Stephen J. Miller, Ph.D., is associate dean for admissions. Dr. Miller will continue to direct the Medical School's Office of Urban Affairs, of which he is the former associate dean, and to serve as a member of the Center for Community Health and Medical Care.

Beverly Bennett, A.B., succeeds Bayley F. Mason as assistant dean for resources. Miss Bennett has served as assistant director of development in the Faculty of Medicine since 1968.

Mrs. Priscilla Hubbard, S.B., is assistant dean for financial affairs. Since 1966 Mrs. Hubbard has been assistant to the dean of the Faculty of Medicine for financial affairs.

1914

Harold W. Stevens writes: "The momentum of those four years in HMS and the later years with the students and faculty and administration of the SPH, is still supplying much of the dynamics of my continuing efforts 'on the social frontiers of medicine,' from earliest 'head start' to latest 'aging.' Presently, through opportunities opened by membership in the state of Maine Committee on Aging, I am focusing specially in help in preparation for the White House Conference on Aging, hopefully disseminating seed and cultivating growth of 'spiritual well being' in favorable soil of 'bodily' and 'mental health.' "

1917

Leslie O. Ashton is gradually retiring and may do a little traveling.

1918

Eric P. Stone writes: "The program for chronically ill and aging, which has been developed and conducted for eight years on a part-time basis for the New Hampshire Division of Public Health, has been elevated to the status of bureau with a full-time director. I continue to serve twice a week as a consultant."

1920

E. Everett O'Neil is recuperating from a near-fatal automobile accident last April, 1970.

Jacob H. Swartz is continuing research in medical mycology and teaching at the MGH.

1921

Allen W. Locke writes that he is still doing some private practice.

1922

Herman A. Winkler writes from Providence, R.I., that he is semi-active now, and is confining himself to a busy office practice.

ALUMNI NOTES

1923

James G. Simmons writes us that "instead of retiring, I'm going to move right on to a new professional building, connected with Burbank Hospital and continue general practice for a few more years."

Arthur W. Wright writes: "I retired as chairman of the department of pathology, Albany Medical College in July 1959 and became emeritus professor in 1968. I continue to be senior pathologist at Albany Medical Center Hospital. From August, 1961 to 1964 and again from April, 1968 to January, 1971, I was secretary of the New York State Board of Medical Examiners. It appears that I am now fully retired."

1924

Panos S. Dukakis writes from Chestnut Hill: "I keep busy with my work which makes me happy. I gave up obstetrics a year ago."

Jacob I. Kalin says that he is continuing his practice and sends best wishes to everyone.

J. Lester Kobacker informs us that "there is still some use for old men!" He was elected president of Ohio Affiliate American Heart Association for 1972. Congratulations.

Stewart Ross writes: "I have retired from practice of surgery and in celebration we took a trip around the world via the S.S. *Rotterdam*."

Hiram O. Studley writes: "Greetings to you on the job in Boston."

1925

Maurice A. Lesser writes: "I have just completed my second edition on *Philosophy in Prayer*. I am now at work on 'Common Sense in Medicine' which I expect to complete in about two years."

1927

Walter R. Berryhill retired as a full time member of the University of North Carolina School of Medicine faculty on June 30, 1971. He has been requested to continue there on a part-time basis as a member of the Division of Education and Research in Community Medical Care. Dr. Berryhill was the first director of that department after he resigned as Dean of the Medical School in 1964. He adds that the faculty is extremely pleased with the new Dean, Christopher C. Fordham '51.

Leslie K. Sycamore has spent six months a year, for the past three years, as a volunteer on the staff of Albert Schweitzer Hospital in Haiti. He writes that it has been a challenging and rewarding experience.

Robert S. Wilkinson joins the list of Class of '27 retirees. Upon leaving his position as staff surgeon at the Huntington (W. Va.) Veterans Administration Hospital in February, Dr. Wilkinson was awarded the Disabled American Veterans National Commander award for outstanding services rendered to disabled veterans. This is the organization's highest award, the hospital's first citation.

1929

Charles Bradley writes that he is enjoying retirement in King City, an adult retirement community about 15 miles southwest of Portland, Oregon.

Hugh F. Folsom is still practicing part time and enjoying living in the hills of Vermont.

1930

Donald E. Higgins writes: "Phasing out — at present making house visits only (while in Cotuit); doing pre-employment exams two mornings a week at Variety Children's Hospital (while in Coconut Grove, Fla.)."



